MULTIMEDIA UNIVERSITY

STUDENT ID NO | | | | | | | | | | |

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2016/2017

DCS5128 – SYSTEM ANALYSIS AND DESIGN

(For Diploma students only)

29 MAY 2017
9.00 a.m - 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **8 pages** with **3 sections.**
2. Answer **ALL** questions.
3. For **Section A** and **B**, shade your answers on the **OMR sheet** provided.
4. For **Section C**, write your answers in the **Answer Booklet** provided.

SECTION A: MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. _____ is designed to support organizational functions or processes.

   A. Design software
   B. Testing software
   C. Analysis software
   D. Application software

2. Who has the primary responsibility for the design and analysis of information systems?

   A. Employees.
   B. Systems analyst.
   C. Software engineer.
   D. Applications developer.

3. Which of the following statements are **TRUE** about *eXtreme Programming*?
   i. Automated tests
   ii. Coding, testing, listening, designing
   iii. At least two-person programming teams
   iv. Short and incremental development cycles

   A. iii and iv
   B. i, ii and iii
   C. ii, iii and iv
   D. All of the above.

4. Most organizations find it beneficial to use a standard set of steps, called _____, to develop and support their information systems.

   A. analytical processing systems
   B. supply chain management systems
   C. systems development methodology
   D. customer relationship management systems

5. Which of the following is **NOT** a general type of CASE tools?

   A. Computer display and report generators.
   B. Diagramming tools.
   C. Analysis tools.
   D. Debuggers.

6. _____ is a practice used by different companies to reduce costs by transferring portions of work to outside suppliers rather than completing it internally.

   A. Realignment
   B. Outsourcing
   C. Downsizing
   D. Contracting

Continued...

7. When purchasing off-the-shelf software, you should consider:

   A. Flexibility
   B. Response time
   C. Vendor viability
   D. All of the above

8. Which of the following are the main reasons for companies to choose cloud computing?
   i. Free internal IT staff
   ii. Cost effective
   iii. Quick access to IT resources
   iv. More reliable

   A. i, ii and iii
   B. i, iii and iv
   C. ii and iii
   D. All of the above

9. Which of the following statements are **FALSE** about open-source software?
   i. Requires a minimal subscription fee.
   ii. Can be freely installed to any computer devices in only certain duration of time.
   iii. Lack of security features compared to commercial software products.
   iv. Linux is an example of open-source OS.

   A. i and ii
   B. i, ii and iii
   C. ii, iii and iv
   D. All of the above.

10. A _____ is a document provided to vendors that asks them to propose hardware and system software that will meet the requirements of a new system.

    A. request for proposal
    B. systems checklist
    C. proposal signage
    D. vendor quotation

11. A project manager must have _____, leadership, and technical skills to successfully coordinate the construction of a complex information system.

    A. planning skills
    B. social relations
    C. customer relations
    D. communication skills

Continued...

12. During _____, the project manager performs several activities to assess the size, scope, and complexity of the project and to establish procedures to support subsequent activities.

    A. project bidding
    B. project delivery
    C. project initiation
    D. project development

13. Which of the following statements is **FALSE** in the context of the project workbook?

    A. It is not useful for project audits.
    B. It can be stored in a large three-ring binder.
    C. All team members use the project workbook.
    D. It can be stored as an online electronic document.

14. Which of the following elements is **NOT** included in the project charter?

    A. Project budget.
    B. Project objectives and description.
    C. Projected start and completion dates.
    D. Key stakeholders, project role, and responsibilities.

15. Which of the following statements is **FALSE** in regard to Gantt chart and network diagram?

    A. Gantt charts visually show the time overlap of tasks, whereas a network diagram shows time overlap but does show which tasks could be done in parallel.
    B. Gantt charts visually show the duration of tasks, whereas a network diagram visually shows the sequence dependencies between tasks.
    C. Gantt charts visually show the time overlap of tasks, whereas a network diagram does not show time overlap but does show, which tasks could be done in parallel.
    D. Some forms of Gantt charts can visually show slack time available within an earliest start and latest finish duration.

16. Which of the following approaches refers to the competitive strategy?

    A. Product differentiation.
    B. Low-cost producer.
    C. Product focus.
    D. All of the above.

Continued...

17. Identification and assessment of all possible system development projects that an organization unit can undertake are conducted during:

A. Project identification and selection.
B. Project initiation and planning.
C. Requirements determination.
D. Requirements structuring.

18. Research has found that projects identified by top management more often:

A. Have greater strategic focus.
B. Have a narrow and non-strategic focus.
C. Will integrate with existing system focus.
D. Have less concern with cost-benefit analysis.

19. Which of the following statements **BEST** describes the characteristic of the steering committee selection method?

A. Faster development.
B. Greater strategic focus.
C. Cross-functional focus.
D. Less concern with cost-benefit analysis.

20. _____ is a statement that makes it clear what business a company is in.

A. Competitive strategy
B. Objective statement
C. Mission statement
D. Business policy

Continued...

SECTION B: TRUE/FALSE (20 MARKS)

*Instruction: Please shade A for **True** statements and **B** for **False** statements on the **OMR sheet** provided.*

21. Project initiation focuses on activities designed to assist in organizing a team to conduct project planning.
22. Baseline project plan contains the best estimate of a project's scope, benefits, costs, risks, and resource requirements.
23. Tangible benefits refer to items can be measured in ringgits and with certainty.
24. Identifying risk is part of project planning and initiation.
25. Walk-throughs are peer group reviews of products created via the systems development process.
26. Joint Application Design (JAD) and prototyping can support effective information collection and structuring as well as reducing the amount of time required for analysis.
27. Open-ended questions can put the interviewee at ease because he/she can respond in his/her own words using his/her own structure.
28. In gathering system requirements, observation method requires less time compared to document analysis method.
29. A formal system is the official way a system works as described in organizational documentation.
30. One of the disadvantages of prototyping is the creation of too many documentations may result in analysis paralysis.
31. In logical database design, we use a process called normalization, which is a way to build a data model that has the properties of simplicity, non-redundancy, and minimal maintenance.
32. An identifier is an attribute (or combination of attributes) whose value is unique across all occurrences of a relation.
33. Each row in a relation corresponds to an attribute of that relation.
34. A report is a business document that contains only predefined data; it is a passive document used solely for reading or viewing.
35. An icon is a graphical picture that represents specific functions within a system.
36. Obtaining maintenance requests, transforming requests into changes, designing changes and implementing changes are the four major maintenance activities.

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37. User testing of a completed information system using simulated data is in best defines for alpha testing.
38. Maintenance activities are limited to software changes.
39. Installing the database is done during the systems implementation phases.
40. Implementation is the last phase of the system development life cycle.

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SECTION C: 3 STRUCTURED QUESTIONS (60 MARKS)

QUESTION 1 [20 MARKS]

a) List and briefly explain five phases in System Development Life Cycle. [5 marks]

b) *Table 1* represents a set of activities of an IS project, its expected completion time (ET) and preceding activities. Answer the following questions:

Activity	Preceding Activity	Expected Time (ET)
Develop Video		
A) Planning	-	5
B) Shoot Sections	A	20
C) Review Video	B	10
D) Edit video section	C	5
E) Edit video-full section	D	3
Develop Narrative		
F) Write narrative text	C	10
G) Review and update text	F	7
H) Record voice-over narrative	G	5
Prototype		
I) Review prototype DVD	E, H	2
J) Update prototype DVD	I	2
K) Tested DVD	J	1

Table 1

i) Construct a network diagram using the given data. [3 marks]

ii) For each activity, identify its *Earliest Completion Time* (T_E), *Latest Completion Time* (T_L) and *Slack Time (ST)*. [11 marks]

iii) List and shade critical path activities. [1 mark]

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QUESTION 2 [20 MARKS]

The following are the basic requirements for computerised Spare Parts Management System:

- Customer enters personal information to *register* through system. The information will be store in Customer record. Customer will get a confirmation upon registration
- Customer and Admin can *login* into the system by key in username and password. Login verification will be send to admin and customer.
- Customer can *search* the spare part by category or by names. Admin can *add* new spare part and category and they will be stored in Category and spare part record.
- Spare part and category can will be *updated* by admin.
- Customer can place the *order* and the order will be stored in Order record.
- Customer can make a *payment* and status of the payment will be updated in the Order record.
- System will *generate* the receipt and it will be send to the customer via email.

Based on the requirements above:

a) Draw a Context Diagram for Spare Parts Management System.

[4 Marks]

b) Draw a *Data Flow Diagram (Level 0)* for Spare Parts Management System by showing general processes, data stores, data flows, and sources/sinks.

[16 Marks]

QUESTION 3 [20 MARKS]

a) What is data type? List **FOUR (4)** objectives in choosing suitable data types.

[5 marks]

b) As a project manager, Chris needs to consider about maintainability of a new system. List and explain **FIVE (5)** factors that influence the maintainability of a system.

[10 marks]

c) Lazada is an example of e-commerce website that running 24-hours per day, 7 days per week, 365-days per year. Discuss any **TWO (2)** methods for maintaining such website.

[5 marks]

End of Page.